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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,440	11/12/2003	Sharon Duvdevani	U 014858-1	8689
140	7590	01/26/2005	EXAMINER	
LADAS & PARRY 26 WEST 61ST STREET NEW YORK, NY 10023			DASTOURI, MEHRDAD	
			ART UNIT	PAPER NUMBER
			2623	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/706,440

Applicant(s)

DUVDEVANI ET AL.

Examiner

Virginia M Kibler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11182004.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment received 12/16/04 has been entered. Claims 1-27 remain pending.

Response to Arguments

2. Applicant's arguments, see page 2, filed 12/16/04, with respect to the rejection of claims 1-27 under Scola have been fully considered and are persuasive. The declaration under 37 CFR 1.131 shows that the invention described and claimed in the present application was conceived and reduced to practice prior to 2/5/98. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made in view of Valesio et al.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8, 12-17, 19, and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Valesio et al. (FR 2 687 091) in view of Aloni et al. (US 5,619,429).

Regarding claims 1, 12, and 21, Valesio et al. ("Valesio") discloses a boundary identifier operative to generate a representation of boundaries of elements in an image which is under inspection (Page 4, para. 7, Page 5; Pages 15-17; Figures 7-8); and a defect identifier operative to

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receive said representation of boundaries of elements and to analyze at least some locations of at least some boundaries in said representation of boundaries of elements to identify defects (Pages 4-5; Page 20; Figures 11-13).

Valesio does not appear to recognize the object under inspection being an electrical circuit. However, Aloni et al. ("Aloni") discloses inspecting an electrical circuit for defects (Abstract; Col. 2, lines 34-42). Valesio and Aloni are combinable because they are from the same field of endeavor of machine vision. At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified the object under inspection to include an electrical circuit. The motivation for doing so would have been because it is well known in the art and it would expand the versatility of the system to encompass inspecting electrical circuits. Therefore, it would have been obvious to combine Valesio with Aloni to obtain the invention as specified in claims 1, 12, and 21.

Regarding claims 2-4, 13-15, and 22-24, Valesio discloses the boundary identifier operative in hardware and the defect identifier operative in software (Page 4-5, 13, and 16).

Regarding claim 5, Valesio discloses the defect identifier is operative to compare an actual location of at least one boundary from among the boundaries in the image under inspection to a location of corresponding boundary in at least one reference image (Page 5, Figures 11-13).

Regarding claim 6, Valesio discloses the boundaries comprise contours (Figures 7-8, 11-12).

Regarding claims 7 and 8, Valesio does not appear to recognize including a putative defect detector. However, Aloni discloses including a putative defect detector operative to

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identify at least some putative defects (Col. 14, lines 53-65) and to analyze regions associated with the putative defects (Col. 26, lines 40-52). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified the defect detection disclosed by Valesio to include a putative defect detector. The motivation for doing so would have been because it is a well known and routinely utilized in the art in order to reduce false alarms. Therefore, it would have been obvious to combine Valesio with Aloni to obtain the invention as specified in claims 7 and 8.

Regarding claims 16, 17, 25, and 26, Valesio discloses analyzing at least one characteristic of a location of some of the boundaries including comparing at least one characteristic of a location of a selected boundary to at least one characteristic of a location of a corresponding boundary in a reference (Pages 4-5; Page 20; Figures 11-13).

Regarding claim 19, Valesio discloses a threshold vicinity defined around at least one boundary in the at least one reference image and wherein the defect identifier is operative to determine whether a corresponding boundary in the image under inspection falls within the threshold vicinity (Pages 4-5; Page 20; Figures 11-13). The arguments analogous to those presented above for claims 7 and 8 are applicable to claim 19.

5. Claims 9, 10, 11, 18, 20, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Valesio et al. (FR 2 687 091) in view of Aloni et al. (US 5,619,429) as applied to claims 1, 8, 12, and 21 above, and further in view of Bachelder (US 5,974,169).

Regarding claims 9 and 10, Valesio does not appear to expressly state identifying a region of interest. However, Bachelder discloses identifying bounding boxes or regions (Abstract), thereby a region of interest identifier, and analyzing only those boundaries in the

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region of interest (Abstract). Valesio, Aloni, and Bachelder are combinable because they are from the same field of endeavor of machine vision. At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified the inspection disclosed by Valesio and Aloni to include a region of interest identifier. The motivation for doing so would have been because it is a well known methodology used in the art to increase efficiency by limiting the search area. Therefore, it would have been obvious to combine Valesio and Aloni with Bachelder to obtain the invention as specified in claims 9 and 10.

Regarding claim 11, the arguments analogous to those presented above for claims 9 and 10 are applicable to claim 11.

Regarding claims 18 and 27, the arguments analogous to those presented above for claim 9 are applicable to claims 18 and 27.

Regarding claim 20, the arguments analogous to those presented above for claims 9 and 19 are applicable to claim 20. Bachelder discloses a threshold vicinity comprising an envelope around at least one boundary in the at least one reference image (Figure 3). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified the threshold vicinity disclosed by Valesio to include an envelope. The motivation for doing so would have been because it accounts for errors arising from any coarse part location error, image acquisition error, or real-world location error (Col. 7, lines 26-32). Therefore, it would have been obvious to combine Valesio and Aloni with Bachelder to obtain the invention as specified in claim 20.


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Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Virginia Kibler can be reached on (703) 306-4072. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Virginia Kibler
01/25/05

MEHRDAD DASTOURI
PRIMARY EXAMINER
